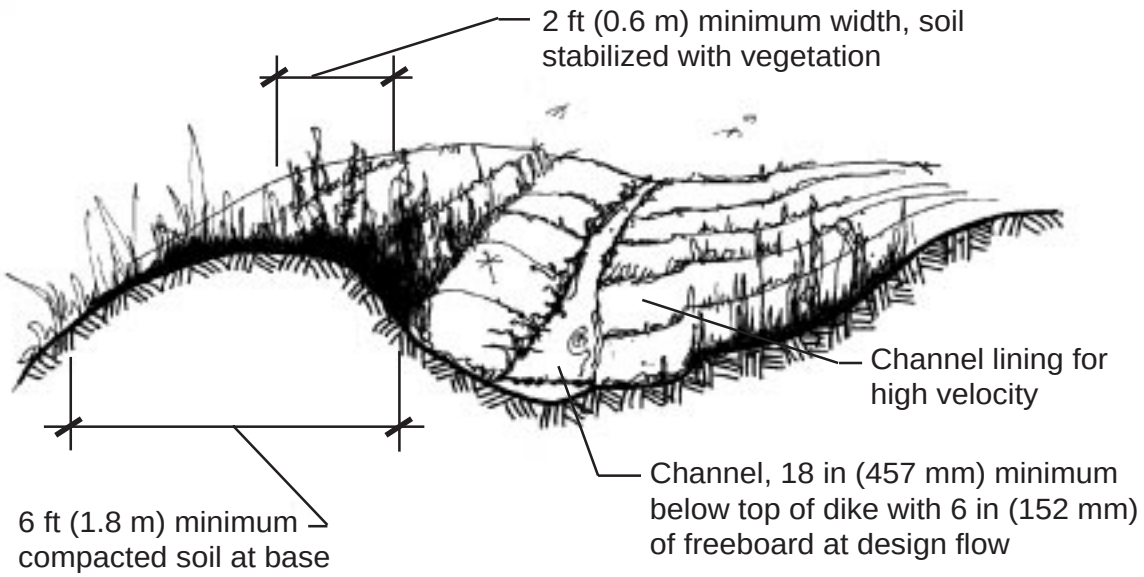
PRIMARY USE: Runoff control.
ADDITIONAL USES: Protection of sensitive areas.

DIVERSION CHANNEL

What is it? A channel constructed across the slope with a supporting ridge on the lower side.

Purpose

To divert excess water from one area for use, or safe disposal in other areas.



Diversion Channel
Section/Perspective View

Limitations

Diversions should not be used below high-sediment-producing areas; unless land treatment practices or structural measures designed to prevent damaging accumulations of sediment in the channels are installed with or before the diversions. Each diversion must have a safe and stable outlet with adequate capacity.

Materials

Usually earthen with vegetation covers; possible need for erosion control matting.

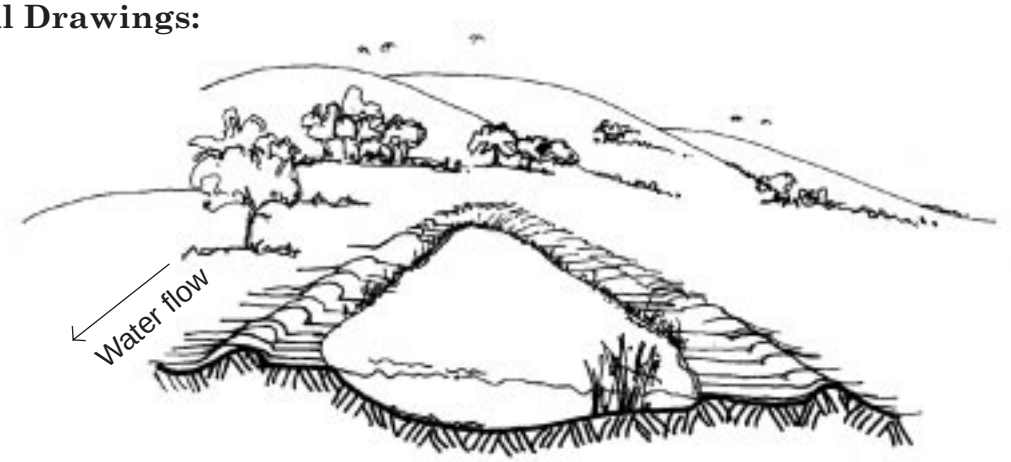
Installation

Diversions as temporary measures, with a life span of less than 2 years, shall carry as a minimum the two year, 24 hour-duration storm. Diversions that protect agricultural land and those that are part of a pollution abatement system must have the capacity to carry the peak runoff from a 10 year-frequency, 24 hour-duration storm as a minimum. Diversions designed to protect areas such as urban areas, buildings, and roads, shall have enough capacity to carry the peak runoff expected from a storm frequency consistent with the hazard involved but not less than a 25 year-frequency, 24 hour-duration storm with a freeboard not less than 4 in (102mm).

Source: NRCS Practice 362, National Handbook of Conservation Practices; NRCS Planning and Design Manual, NRCS.

DIVERSION CHANNEL

Additional Drawings:



Diversion Protecting a Sensitive Area
Perspective View

Planning Considerations (temporary diversion) -
A temporary diversion dike is intended to divert overland sheet flow to a stabilized outlet or a sediment trapping facility during establishment of permanent stabilization on sloping, disturbed areas. When used at the top of a slope, the structure protects exposed slopes by keeping upland runoff away. When used at the base of a slope, the structure protects adjacent and downstream areas by diverting sediment- laden runoff to a sediment trapping facility. If the dike is going to remain in place for longer than 30 days, it is very important that it be established with temporary or permanent vegetation. The slope behind the dike is also an important consideration. The dike must have a positive grade to assure drainage, but if the slope is too great, precautions must be taken to prevent erosion due to high velocity flow behind the dike.

This practice is considered an economical one because it uses material available on the site and can usually be constructed with equipment needed for site grading. The useful life of the practice can be extended by stabilizing the dike with vegetation.

Design Criteria - Diversions should be designed by a qualified professional. The following criteria may be used as guidelines:

Drainage Area - The maximum allowable drainage area is 2 hectares (5 acres).
Dimensions - The typical height measured from the upslope side of the dike is 18 in (457 mm). Top width shall be a minimum of 2 ft (0.6 m) with a typical base width of 6 ft (1.9 m).
Side Slopes - 3:1 or flatter
Grade - The channel behind the diversion shall have a positive grade to a stabilized outlet. If the channel slope is less than or equal to 2 percent, stabilization is normally not required. If the slope is greater than 2 percent, the channel shall be stabilized with temporary seeding.
Outlet - Design the outlet to accept flow from the diversion plus any other contributing areas. Divert sediment-laden runoff and release through a sediment-trapping device. Flow from undisturbed areas can be dispersed by a level spreader.
Vegetation - Vegetate the ridge immediately after construction, unless it will remain in place less than 30 days.
Maintenance - The measure should be inspected after every storm and repairs made to the dike, flow channel and outlet, as necessary. Approximately once every week, whether a storm has occurred or not, the measure should be inspected and repairs made if needed. Damages caused by construction traffic or other activity must be repaired before the end of each working day.

Source: NRCS Practice 362, National Handbook of Conservation Practices; NRCS Planning and Design Manual, NRCS.